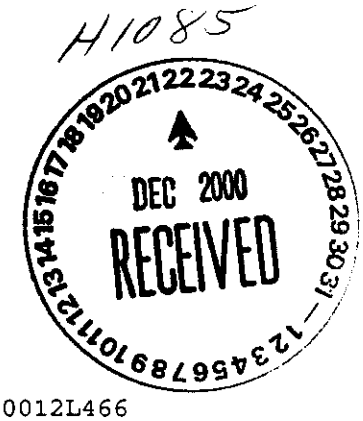
0054395

H1085



Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-029 H1085

DATE RECEIVED: 12/06/00 RFW LOT # :0012L466

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B10F56						
TCLP	001	S	00LTO140	10/03/00	12/12/00	12/13/00
SILVER, TCLP LEACHAT	002	W	99L1808	12/13/00	12/13/00	12/14/00
SILVER, TCLP LEACHAT	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
SILVER, TCLP LEACHAT	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00
ARSENIC, TCLP LEACHA	002	W	99L1808	12/13/00	12/13/00	12/15/00
ARSENIC, TCLP LEACHA	002 REP	W	99L1808	12/13/00	12/13/00	12/15/00
ARSENIC, TCLP LEACHA	002 MS	W	99L1808	12/13/00	12/13/00	12/15/00
BARIUM, TCLP LEACHAT	002	W	99L1808	12/13/00	12/13/00	12/14/00
BARIUM, TCLP LEACHAT	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
BARIUM, TCLP LEACHAT	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00
CADMIUM, TCLP LEACHA	002	W	99L1808	12/13/00	12/13/00	12/14/00
CADMIUM, TCLP LEACHA	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
CADMIUM, TCLP LEACHA	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00
CHROMIUM, TCLP LEACH	002	W	99L1808	12/13/00	12/13/00	12/14/00
CHROMIUM, TCLP LEACH	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
CHROMIUM, TCLP LEACH	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00
MERCURY, TCLP LEACHA	002	W	00C0429	12/13/00	12/13/00	12/14/00
MERCURY, TCLP LEACHA	002 REP	W	00C0429	12/13/00	12/13/00	12/14/00
MERCURY, TCLP LEACHA	002 MS	W	00C0429	12/13/00	12/13/00	12/14/00
LEAD, TCLP LEACHATE	002	W	99L1808	12/13/00	12/13/00	12/14/00
LEAD, TCLP LEACHATE	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
LEAD, TCLP LEACHATE	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00
SELENIUM, TCLP LEACH	002	W	99L1808	12/13/00	12/13/00	12/14/00
SELENIUM, TCLP LEACH	002 REP	W	99L1808	12/13/00	12/13/00	12/14/00
SELENIUM, TCLP LEACH	002 MS	W	99L1808	12/13/00	12/13/00	12/14/00

LAB QC:

EDMC

SILVER LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00
SILVER, TCLP LEACHAT	MB1	W	99L1808	N/A	12/13/00	12/14/00
SILVER, TCLP LEACHAT	MB2	W	99L1808	N/A	12/13/00	12/14/00
ARSENIC LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/15/00
ARSENIC, TCLP LEACHA	MB1	W	99L1808	N/A	12/13/00	12/15/00
ARSENIC, TCLP LEACHA	MB2	W	99L1808	N/A	12/13/00	12/15/00
BARIUM LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00

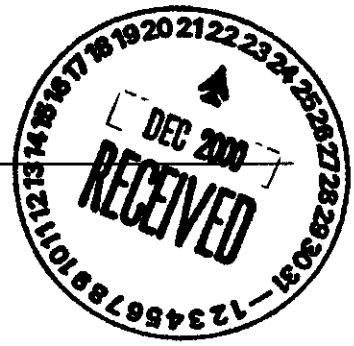
Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD B00-029 H1085

DATE RECEIVED: 12/06/00 RFW LOT # :0012L466

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BARIUM, TCLP LEACHAT	MB1	W	99L1808	N/A	12/13/00	12/14/00
BARIUM, TCLP LEACHAT	MB2	W	99L1808	N/A	12/13/00	12/14/00
CADMIUM LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00
CADMIUM, TCLP LEACHA	MB1	W	99L1808	N/A	12/13/00	12/14/00
CADMIUM, TCLP LEACHA	MB2	W	99L1808	N/A	12/13/00	12/14/00
CHROMIUM LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00
CHROMIUM, TCLP LEACH	MB1	W	99L1808	N/A	12/13/00	12/14/00
CHROMIUM, TCLP LEACH	MB2	W	99L1808	N/A	12/13/00	12/14/00
MERCURY LABORATORY	LC1 BS	W	00C0429	N/A	12/13/00	12/14/00
MERCURY, TOTAL	MB1	W	00C0429	N/A	12/13/00	12/14/00
MERCURY, TCLP LEACHA	MB2	W	00C0429	N/A	12/13/00	12/14/00
LEAD LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00
LEAD, TCLP LEACHATE	MB1	W	99L1808	N/A	12/13/00	12/14/00
LEAD, TCLP LEACHATE	MB2	W	99L1808	N/A	12/13/00	12/14/00
SELENIUM LABORATORY	LC1 BS	W	99L1808	N/A	12/13/00	12/14/00
SELENIUM, TCLP LEACH	MB1	W	99L1808	N/A	12/13/00	12/14/00
SELENIUM, TCLP LEACH	MB2	W	99L1808	N/A	12/13/00	12/14/00

RECRA
ENVIRONMENTAL
INC.

Chemical and Environmental Measurement Information



Recra LabNet Philadelphia
Analytical Report

Client: TNU-HANFORD B00-029
RFW#: 0012L466
SDG/SAF#: H1085/B00-029

W.O.#: 10985-001-001-9999-00
Date Received: 12-06-00

METALS CASE NARRATIVE

1. This narrative covers the analyses of 1 TCLP leachate sample.

2. The sample was prepared and analyzed in accordance with methods checked on the attached glossary. This is a relog of Recra batch# 0010L919-002.

3. All analyses were performed within the required holding times.

4. All cooler temperatures have been recorded on the original Chain of Custody.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL) with the exception of Arsenic in file PS1214C. All samples were rerun for Arsenic in file PS1215A.

7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL), MB value less than 5% of the RCRA limit, or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.

8. All ICP Interference Check Standards were within control limits.

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to form 7.

10. All duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

11. The TCLP extract from sample B10F56 was selected for the matrix spike (MS) for this analytical batch. All MS recoveries were greater than 50% as per method criteria.

208 Welsh Pool Road • Lionville, PA 19341-1333 • (610) 280-3000 • Fax (610) 280-3041

12. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

13. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Pat E

12-19-00
Date

J. Michael Taylor
VP, Laboratory General Manager
Lionville Laboratory

gmb/m12-466

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this Recra Lot#: 0012L466

Leaching Procedure: __1310 ✓1311 __1312 __Other:_____

CLP Metals __ Digestion and __ Analysis Methods: __ILM03.0 __ILM04.0

Metals Digestion Methods: __3005A ✓3010A __3015 __3020A __3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	__6010B	__200.7			__99
Antimony	__6010B __7041 [5]	__200.7 __204.2			__99
Arsenic	✓6010B __7060A [5]	__200.7 __206.2	__3113B		__99
Barium	✓6010B	__200.7			__99
Beryllium	__6010B	__200.7			__99
Bismuth	__6010B [1]	__200.7 [1]		__1620	__99
Boron	__6010B	__200.7			__99
Cadmium	✓6010B __7131A [5]	__200.7 __213.2			__99
Calcium	✓6010B	__200.7			__99
Chromium	✓6010B __7191 [5]	__200.7 __218.2			__SS17
Cobalt	__6010B	__200.7			__99
Copper	__6010B __7211 [5]	__200.7 __220.2			__99
Iron	__6010B	__200.7			__99
Lead	✓6010B __7421 [5]	__200.7 __239.2	__3113B		__99
Lithium	__6010B __7430 [4]	__200.7		__1620	__99
Magnesium	__6010B	__200.7			__99
Manganese	__6010B	__200.7			__99
Mercury	✓7470A [3] __7471A [3]	__245.1 [2] __245.5 [2]			__99
Molybdenum	__6010B	__200.7			__99
Nickel	__6010B	__200.7			__99
Potassium	__6010B __7610 [4]	__200.7 __258.1 [4]			__99
Rare Earths	✓6010B [1]	__200.7 [1]		__1620	__99
Selenium	✓6010B __7740 [5]	__200.7 __270.2	__3113B		__99
Silicon	__6010B [1]	__200.7		__1620	__99
Silica	✓6010B	__200.7		__1620	__99
Silver	✓6010B __7761 [5]	__200.7 __272.2			__99
Sodium	__6010B __7770 [4]	__200.7 __273.1 [4]			__99
Strontium	__6010B	__200.7			__99
Thallium	__6010B __7841 [5]	__200.7 __279.2 __200.9			__99
Tin	__6010B	__200.7			__99
Titanium	__6010B	__200.7			__99
Uranium	__6010B [1]	__200.7 [1]		__1620	__99
Vanadium	__6010B	__200.7			__99
Zinc	__6010B	__200.7			__99
Zirconium	__6010B [1]	__200.7 [1]		__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.

2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).

3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).

4. Flame AA.

5. Graphite Furnace AA.

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 12/15/00

CLIENT: TNUHANFORD B00-029 H1085 RECRA LOT #: 0012L466

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	B10F56	Silver, TCLP Leachate	2.5	u	UG/L	2.5	1.0
		Arsenic, TCLP Leachate	33.9	u	UG/L	33.9	1.0
		Barium, TCLP Leachate	372		UG/L	3.0	1.0
		Cadmium, TCLP Leachate	17.4		UG/L	3.4	1.0
		Chromium, TCLP Leachate	98.9		UG/L	4.9	1.0
		Mercury, TCLP Leachate	0.80		UG/L	0.10	1.0
		Lead, TCLP Leachate	25.0	u	UG/L	25.0	1.0
		Selenium, TCLP Leachate	62.3	u	UG/L	62.3	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 12/15/00

CLIENT: TNUHANFORD B00-029 H1085 RECRA LOT #: 0012L466

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L1808-MB1	Silver, TCLP Leachate	2.5	u	UG/L	2.5	1.0
		Arsenic, TCLP Leachate	33.9	u	UG/L	33.9	1.0
		Barium, TCLP Leachate	3.0	u	UG/L	3.0	1.0
		Cadmium, TCLP Leachate	3.4	u	UG/L	3.4	1.0
		Chromium, TCLP Leachate	4.9	u	UG/L	4.9	1.0
		Lead, TCLP Leachate	25.0	u	UG/L	25.0	1.0
		Selenium, TCLP Leachate	62.3	u	UG/L	62.3	1.0
BLANK2	99L1808-MB2	Silver, TCLP Leachate	2.5	u	UG/L	2.5	1.0
		Arsenic, TCLP Leachate	33.9	u	UG/L	33.9	1.0
		Barium, TCLP Leachate	3.0	u	UG/L	3.0	1.0
		Cadmium, TCLP Leachate	3.4	u	UG/L	3.4	1.0
		Chromium, TCLP Leachate	4.9	u	UG/L	4.9	1.0
		Lead, TCLP Leachate	25.0	u	UG/L	25.0	1.0
		Selenium, TCLP Leachate	62.3	u	UG/L	62.3	1.0
BLANK1	00C0429-MB1	Mercury, Total	0.10	u	UG/L	0.10	1.0
BLANK2	00C0429-MB2	Mercury, TCLP Leachate	0.10	u	UG/L	0.10	1.0

Recra LabNet - Lionville

INORGANICS ACCURACY REPORT 12/15/00

CLIENT: TNUHANFORD B00-029 H1085 - RECRA LOT #: 0012L466

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	B10F56	Silver, TCLP Leachate	4580	2.5 u	5000	91.5	1.0
		Arsenic, TCLP Leachate	4930	33.9 u	5000	98.5	1.0
		Barium, TCLP Leachate	98400	372	100000	98.0	1.0
		Cadmium, TCLP Leachate	951	17.4	1000	93.4	1.0
		Chromium, TCLP Leachat	4780	98.9	5000	93.6	1.0
		Mercury, TCLP Leachate	170	0.80	200	84.5	50.0
		Lead, TCLP Leachate	4800	25.0 u	5000	96.0	1.0
		Selenium, TCLP Leachat	952	62.3 u	1000	95.2	1.0

Recra LabNet - Lionville

INORGANICS PRECISION REPORT 12/15/00

CLIENT: TNUHANFORD B00-029.H1085 RECRA LOT #: 0012L466

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	B10F56	Silver, TCLP Leachate	2.5 u	2.5 u	NC	1.0
		Arsenic, TCLP Leachate	33.9 u	33.9 u	NC	1.0
		Barium, TCLP Leachate	372	365	1.8	1.0
		Cadmium, TCLP Leachate	17.4	17.9	2.8	1.0
		Chromium, TCLP Leachate	98.9	98.4	0.51	1.0
		Mercury, TCLP Leachate	0.80	0.78	3.4	1.0
		Lead, TCLP Leachate	25.0 u	25.0 u	NC	1.0
		Selenium, TCLP Leachate	62.3 u	62.3 u	NC	1.0

Recra LabNet - Lionville

INORGANICS LABORATORY CONTROL STANDARDS REPORT 12/15/00

CLIENT: TNUHANFORD B00-029.H1085 RECRA LOT #: 0012L466

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	99L1808-LC1	Silver, LCS	499	500	UG/L	99.8
		Arsenic, LCS	9890	10000	UG/L	98.9
		Barium, LCS	4860	5000	UG/L	97.3
		Cadmium, LCS	248	250	UG/L	99.2
		Chromium, LCS	489	500	UG/L	97.8
		Lead, LCS	2420	2500	UG/L	96.8
		Selenium, LCS	9100	10000	UG/L	91.0
LCS1	00C0429-LC1	Mercury, LCS	5.3	5.0	UG/L	105.1

RECRA LabNet Use Only: 0012L466

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

RECRA LabNet

Client: TNU-Hanford B00-029
Est. Final Proj. Sampling Date:
Project #: 10985-001-001-9999-00
Project Contact/Phone #:
RECRA Project Manager: OJ
QC: Spec Del: Std TAT: 3 day
Date Rec'd: 12-6-00 Date Due: 12-9-00
Account #:

		A S	Leachate
Refrigerator #			
#/Type Container	Liquid		
	Solid	1AG	
Volume	Liquid		
	Solid	60	
Preservatives			

ANALYSES REQUESTED → ORGANIC: VOA, BNA, Pest/PCB, Herb; INORG: Metal, CN

RECRA LabNet Use Only

MATRIX CODES: S - Soil; SE - Sediment; SO - Solid; SL - Sludge; W - Water; O - Oil; A - Air; DS - Drum Solids; DL - Drum Liquids; L - EP/TCLP Leachate; WI - Wipe; X - Other; F - Fish

Lab ID	Client ID/Description	MS	MSD	Matrix	Date Collected	Time Collected	TCLP	RCRA TCLP
001	B10F56			S	10-30-00	1258	✓	
002	↓ tclp of 001			L	*	–		✓

Special Instructions: Saf B00-029

DATE/REVISIONS:
1. Relog of 0010L919-002 per SDB00 ...
* 2. See lab chron
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Relog	TKoppel	12/6/00	–

Relinquished by	Received by	Date	Time
COMPOSITE WASTE	ORIGINAL REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N
NOTES:

RECRA LabNet Use Only
Samples were: 1) Shipped ___ or Hand Delivered ___
Airbill # ___
2) Ambient or Chilled
3) Received in Good Condition Y or N
4) Labels Indicate Properly Preserved Y or N
5) Received Within Holding Times Y or N

COC Tape was:
1) Present on Outer Package Y or N
2) Unbroken on Outer Package Y or N
3) Present on Sample Y or N
4) Unbroken on Sample Y or N
COC Record Present Upon Sample Rec't Y or N
Cooler Temp. ___ °C